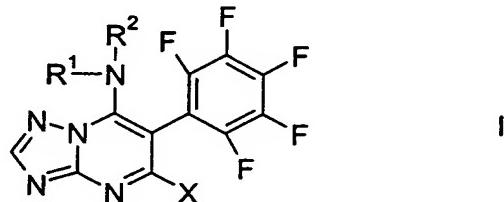


What is claimed is:

1. A 6-pentafluorophenyltriazolopyrimidine of the formula I



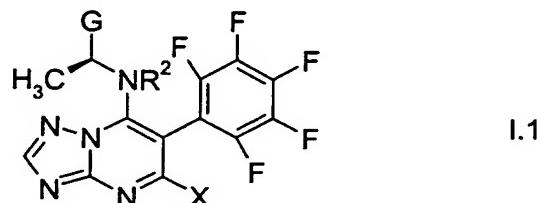
5 in which the substituents are as defined below:

- R<sup>1</sup> is C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>1</sub>-C<sub>8</sub>-haloalkyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, C<sub>3</sub>-C<sub>8</sub>-halocycloalkyl,  
10 C<sub>2</sub>-C<sub>8</sub>-alkenyl, C<sub>2</sub>-C<sub>8</sub>-haloalkenyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkenyl, C<sub>3</sub>-C<sub>6</sub>-halocyclo-  
alkenyl, C<sub>2</sub>-C<sub>8</sub>-alkynyl, C<sub>2</sub>-C<sub>8</sub>-haloalkynyl or phenyl, naphthyl or a five- or  
six-membered saturated, partially unsaturated or aromatic heterocycle  
which contains one to four heteroatoms from the group consisting of O, N  
and S,
- 15 R<sup>2</sup> is hydrogen or one of the groups mentioned under R<sup>1</sup>,
- 20 R<sup>1</sup> and R<sup>2</sup> together with the nitrogen atom to which they are attached may  
also form a five- or six-membered heterocycl or heteroaryl which is  
attached via N and may contain one to three further heteroatoms from the  
group consisting of O, N and S as ring members and/or may carry one or  
more substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl,  
C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-haloalkenyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy,  
C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-haloalkenyloxy, (exo)-C<sub>1</sub>-C<sub>6</sub>-  
alkylene and oxy-C<sub>1</sub>-C<sub>3</sub>-alkyleneoxy;
- 25 R<sup>1</sup> and/or R<sup>2</sup> may carry one to four identical or different groups R<sup>a</sup>:
- 30 R<sup>a</sup> is halogen, cyano, nitro, hydroxyl, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl,  
C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy,  
C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, C<sub>1</sub>-C<sub>6</sub>-alkylamino,  
di-C<sub>1</sub>-C<sub>6</sub>-alkylamino, C<sub>2</sub>-C<sub>8</sub>-alkenyl, C<sub>2</sub>-C<sub>8</sub>-haloalkenyl, C<sub>2</sub>-C<sub>6</sub>-  
alkenyloxy, C<sub>2</sub>-C<sub>8</sub>-alkynyl, C<sub>2</sub>-C<sub>8</sub>-haloalkynyl, C<sub>3</sub>-C<sub>6</sub>-alkynyoxy,  
oxy-C<sub>1</sub>-C<sub>3</sub>-alkyleneoxy, C<sub>3</sub>-C<sub>8</sub>-cycloalkenyl, phenyl, naphthyl, a five-  
or six-membered saturated, partially unsaturated or aromatic  
heterocycle which contains one to four heteroatoms from the group  
consisting of O, N and S, where these aliphatic, alicyclic or aromatic  
groups for their part may be partially or fully halogenated;

X is cyano, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>3</sub>-C<sub>4</sub>-alkenyloxy, C<sub>1</sub>-C<sub>2</sub>-haloalkoxy or C<sub>3</sub>-C<sub>4</sub>-haloalkenyloxy.

2. The compound of the formula I according to claim 1, in which X is cyano, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>3</sub>-C<sub>4</sub>-alkenyloxy, C<sub>1</sub>-C<sub>2</sub>-haloalkoxy or C<sub>3</sub>-C<sub>4</sub>-haloalkenyloxy.
- 5 3. The compound of the formula I according to claim 1 or 2, in which X is cyano.
4. The compound of the formula I according to claim 1 or 2, in which X is methoxy.
- 10 5. The compound of the formula I according to claim 1, in which X is C<sub>1</sub>-C<sub>4</sub>-alkyl.
6. The compound of the formula I according to any of claims 1 to 5, in which R<sup>1</sup> and R<sup>2</sup> are as defined below:
- 15 R<sup>1</sup> is CH(CH<sub>3</sub>)-CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)-CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)-C(CH<sub>3</sub>)<sub>3</sub>, CH(CH<sub>3</sub>)-CF<sub>3</sub>, CH<sub>2</sub>C(CH<sub>3</sub>)=CH<sub>2</sub>, CH<sub>2</sub>CH=CH<sub>2</sub>, cyclopentyl or cyclohexyl;
- 20 R<sup>2</sup> is hydrogen or methyl;
- R<sup>1</sup> and R<sup>2</sup> together form -(CH<sub>2</sub>)<sub>2</sub>CH(CH<sub>3</sub>)(CH<sub>2</sub>)<sub>2</sub><sup>-</sup>, -(CH<sub>2</sub>)<sub>2</sub>CH(CF<sub>3</sub>)(CH<sub>2</sub>)<sub>2</sub><sup>-</sup> or -(CH<sub>2</sub>)<sub>2</sub>O(CH<sub>2</sub>)<sub>2</sub><sup>-</sup>.

7. A compound of the formula I.1:



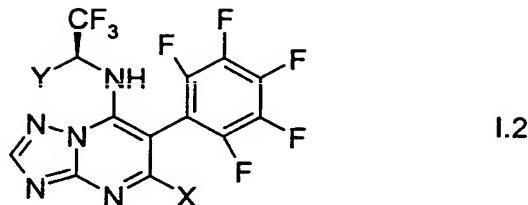
in which

G is C<sub>2</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxymethyl or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

R<sup>2</sup> is hydrogen or methyl; and

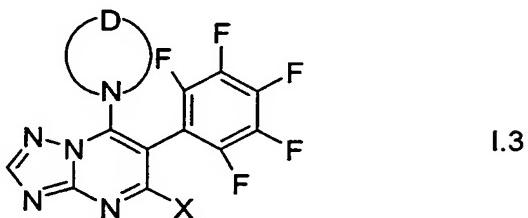
X is cyano, methyl, methoxy or ethoxy.

- 30 8. A compound of the formula I.2.



in which Y is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl and X is cyano, methyl, methoxy or ethoxy.

- ## 5 9. A compound of the formula I.3,

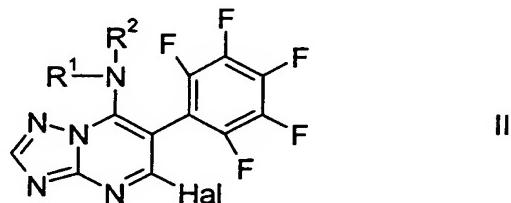


in which

- 10 D together with the nitrogen atom forms a five- or six-membered heterocyclic or heteroaryl which is attached via N and may contain a further heteroatom from the group consisting of O, N and S as ring member and/or may carry one or more substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-haloalkenyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, C<sub>3</sub>-C<sub>6</sub>-haloalkenyloxy, (exo)-C<sub>1</sub>-C<sub>6</sub>-alkylene and oxy-C<sub>1</sub>-C<sub>3</sub>-alkyleneoxy; and

15 X is cyano, methyl, methoxy or ethoxy.

20 10. A process for preparing the compounds of the formula I according to claim 2 by reacting 5-halo-6-(2,4,6-trifluorophenyl)triazolopyrimidines of the formula II



in which Hal is a halogen atom, with compounds of the formula III

M-X

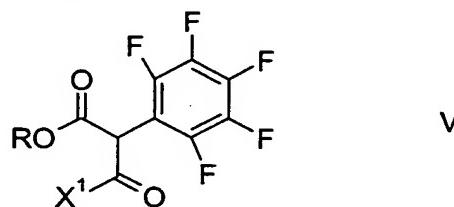
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- in which M is an ammonium, tetraalkylammonium or alkali metal or alkaline earth metal cation and X is as defined in claim 2.

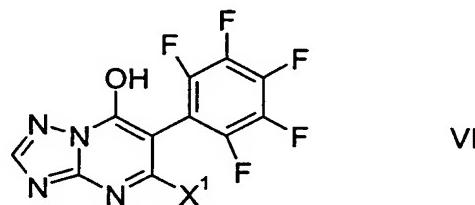
11. A process for preparing compounds of the formula I according to claim 5 by reacting 2-aminotriazole of the formula IV



5 with keto esters of the formula V

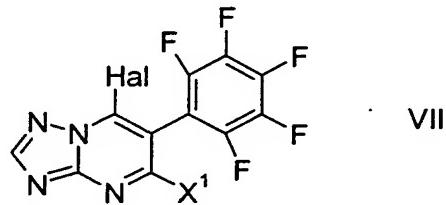


in which R and X¹ independently of one another are C<sub>1</sub>-C<sub>4</sub>-alkyl and L<sup>1</sup>, L<sup>2</sup> and L<sup>3</sup> are as defined in claim 1, to give 5-alkyl-7-hydroxy-6-phenyltriazolopyrimidines of the formula VI,



10

halogenation of VI with halogenating agents to give halopyrimidines of the formula VII



in which Hal is a halogen atom, and reaction of VII with amines of the formula VIII



15

in which R¹ and R² are as defined in formula I.

12. A composition, comprising a solid or liquid carrier and a compound of the formula I according to claim 1 or 2.

20

13. Seed, comprising a compound of the formula I according to claim 1 or 2 in an amount of from 1 to 1000 g/100 kg.

14. A method for controlling phytopathogenic harmful fungi, which method comprises  
treating the fungi or the materials, plants, the soil or seeds to be protected  
against fungal attack with an effective amount of a compound of the formula I  
according to claim 1 or 2.

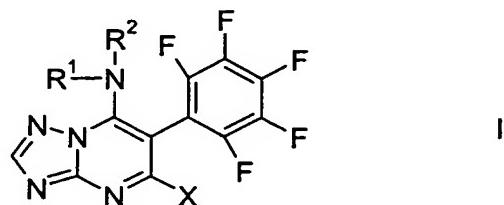
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6-Pentafluorophenyl-triazolopyrimidines, method for their production and their use for combating pathogenic fungi, in addition to agents containing said substances

**Abstract**

5

6-Pentafluorophenyltriazolopyrimidines of the formula I



in which the substituents are as defined below:

10    R<sup>1</sup>    is alkyl, haloalkyl, cycloalkyl, halocycloalkyl, alkenyl, haloalkenyl, cycloalkenyl, halocycloalkenyl, alkynyl, haloalkynyl or phenyl, naphthyl, or a five- or six-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S,

15    R<sup>2</sup>    is hydrogen or one of the groups mentioned under R<sup>1</sup>,

R<sup>1</sup> and R<sup>2</sup> together with the nitrogen atom to which they are attached may also form a five- or six-membered heterocycl or heteroaryl which is attached via N and may contain one to three further heteroatoms from the group consisting of O, N and S as ring members;

R<sup>1</sup> and/or R<sup>2</sup> may be substituted as defined in the description;

X    is cyano, alkyl, alkoxy, alkenyloxy, haloalkoxy or haloalkenyloxy,

25

processes for preparing these compounds, compositions comprising them and their use for controlling phytopathogenic harmful fungi.